

Function:

The separation of liquid mixtures and recovery of the components typically involves the distillation process. Distillation and fractionation operations are found throughout the petroleum, petrochemical and numerous other industries. This trainer separates a methanol/water mixture in a see-through, bubble cap tray column. The trainer is equipped with industry-typical process measurement and control devices. The entire trainer is controlled from an industrial standard distributed control system (DCS).

Process Highlights:

- Working fluids methanol and water
- Continuous variable flow
- Liquids are recycled to the feed tank for continuous operation

Process Details:

- Maximum Process Temperature: 100 °C (212 °F)
- Process Pressure: Atmospheric

Equipment Specification Highlights:

- Glass distillation column with nine bubble-cap trays - 6" (15mm) ID
- Glass reflux accumulator - 4" (100mm) ID
- All other process equipment made of stainless steel
- Reboiler with optional electric or steam heat - 30kW capacity
- Three heat exchangers, brazed SS plate type
- Three centrifugal pumps
- Stainless steel feed storage tank and two glass product receivers
- Electronic process measurement and distributed control system with 5 control loops
 - o Liquid flow control with orifice meters
 - o Ratio option on reflux/top product control
 - o Level control with D/P cell level measurement
 - o Twenty one temperature measurement points
- Liquid sample and temperature of each tray
- Time to reach steady state after a reasonable step change - less than 20 minutes



Model Series: BD-300 (reduced height version shown above)

- Approximate overall dimensions - 1143 x 3660 x 3840mm high (3'9" x 12' x 12'7") (a reduced height version is also available - 1300 x 3320 x 3240mm high)
- Available in all world voltages / frequencies (customer to specify electrical power available on -site)

Options - please specify:

- Steam or electric reboiler
- Normal or reduced height option

Note: A complete teaching system is included with student exercises, instructors' manual, technical and maintenance manuals.